

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference Y1J0188	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP02/06766	International filing date (day/month/year) July 4, 2002	Priority date (day/month/year) July 9, 2001
International Patent Classification (IPC) or national classification and IPC Int.Cl. ⁷ A01H5/00,C12N15/09,C12N9/10		
Applicant AJINOMOTO CO., INC.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☒ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand December 5, 2002	Date of completion of this report June 12, 2003
Name and mailing address of the IPEA/JP JAPAN PATENT OFFICE Facsimile No.	Authorized officer 2B2914 Takahiko MATSUMOTO Telephone No. 03-3581-1101 Ex: 3236

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP02/06766

I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed

☐ the description:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the claims:

pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the drawings:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☒ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☒ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP02/06766

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-26	YES
	Claims		NO
Inventive step (IS)	Claims	14-21, 23-26	YES
	Claims	1-13, 22	NO
Industrial applicability (IA)	Claims	1-26	YES
	Claims		NO

2. Citations and explanations

Please see attached paper.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

2. CITATION AND EXPLANATIONS

Cited Documents

Document 1: ORZECZOWSKI et al. Alanine aminotransferase and glycine aminotransferase from maize (*Zea mays* L.) leaves. *Acta Biochimica Polonica* 1999, Vol. 46, No. 2, pages 447 and 457

Document 2: NOGUCHI and HAYASHI. Plant leaf alanine: 2-oxogutarate aminotransferase. Peroxisomal localization and identity with glutamate: glyoxylate aminotransferase. *Biochem. J.* 1981, Vol. 195, pages 235 and 239

Document 3: NOGUCHI and FUJIWARA. Development of glutamate: glyoxylate aminotransferase in the cotyledons of cucumber (*Cucumis sativus*) seedlings. *Biochem. J.* 1982, Vol. 201, pages 209 and 214

Document 4: JP 2002-27856 A (AJINOMOTO Co. Ltd.) 2002. 01. 29, full text, Fig. 1-5, & US 2002/0100074 A1

Claims 1-13 and 22

In general, it is the conventional means for examining functions of an enzyme to disrupt the gene encoding the enzyme or inhibit the expression of the gene using anti-sense method or gene disruption method with T-DNA. In addition, the above-mentioned Documents 1-3 suggest that alanine aminotransferase has the activity of glutamate glyoxylate aminotransferase.

Therefore, it is for those skilled in the art to produce a plant of which glutamate glyoxylate aminotransferase activity is lacked or reduced in order to further analyze functions of said enzyme, by using the above-mentioned conventional means. Therefore, the present inventions set out in claims 1-13 and 22 do not have inventive steps.

Claims 14-21 and 23-26

It is not obvious for those skilled in the art to increase glutamate content by deleting or reducing the glutamate glyoxylate transferase activity, since it is neither described nor suggested in Documents 1-4.

VI. Certain documents cited.

1. Certain published documents

<u>Application No. Patent No.</u>	<u>Publication Date (day/month/year)</u>	<u>Filing Date (day/month/year)</u>	<u>Pirority date (valid claim) (day/month/year)</u>
JP2002-272290 A [EA]	24/09/2002	19/03/2001	

2. Non-written disclosures

<u>Kind of non-written disclosure</u>	<u>Date of non-written disclosure (day/month/year)</u>	<u>Date of written disclosure referring to non-written disclosure (day/month/year)</u>
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